

Vidya Krull, Ph.D., CCC-A

Principal Scientist | Human-Centered Healthcare Innovation

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Executive Summary

Principal-level hearing technology scientist and audiologist with 20+ years of experience driving next-generation health solutions from concept through global product launch. Recognized for translating complex behavioral data into commercially scalable hearing-device innovations, with deep expertise in speech perception, amplification systems, psychoacoustics, and human-centered device design. Former Senior Research Scientist at GN Hearing, leading cross-disciplinary R&D teams in the evaluation and validation of advanced hearing-aid algorithms and user-comfort technologies. Inventor of five device patents with sustained impact on personalization and digital health integration.

Core Expertise

- *Behavioral Research:* Multimodal physiological and behavioral data, Hearing-aid amplification and device acoustics, Speech perception and auditory cognition, Spatial hearing and psychoacoustics, Hearing loss and aging, including wearables and biomarkers
- *Research & Product Development:* Clinical research and evidence generation, Human-subject validation, Translational research for medical devices, Cross-functional R&D leadership, Product innovation and technology evaluation
- *Innovation & Impact:* Hearing-device patents and intellectual property, Industry-academic research partnerships, Strategic technology assessment, Scientific communication and stakeholder engagement

Patented Technologies

Inventor of 5 hearing-device patents (3 granted) covering device geometry, acoustic systems, and configurable hearing architectures.

- **Krull, V.** & Dittberner, A. (2023). Hearing devices and methods of making the same. [US11570561B2](#)
- **Krull, V.** (2021). Device and method for earpiece design. [US20210334439A1](#)
- Dittberner, A.B., & **Krull, V.** (2021). Acoustic Device. [US10924837B2](#)
- **Krull, V.** (2020). Hearing device and manufacturing method thereof. [JP2020109950A](#)
- **Krull, V.** (2019). Configurable hearing devices. [US11418865B2](#)

Professional Experience

Senior Research Scientist | GN Hearing A/S • August 2013 - January 2023 • Glenview, IL

- Designed and led algorithm validation studies (proof-of-concept) for three generations of feedback-cancellation and spatial-audio algorithms, supporting the key feature release and product launch of ReSound ONE with M&RIE in 2020. Product deployed across EMEA, APAC, and North America; launch contributed to 14% organic growth
- Designed and led user validation studies and supervised a Master's student internship project investigating novel finite element modeling solutions for comfort measurement of hearing devices; Research supported new hearing protection product line development and launch, spawning a specialized independent brand, GN FalCom, in 2019
- Led cross-functional R&D team (acoustics, hardware, signal processing) validating vibration-sensor own-voice reconstruction, adopted into the core signal-processing architecture used in ReSound Vivia (2025); Technology contributed to 31% divisional profit growth through improved speech-in-noise performance
- Provided strategic recommendations to executive leadership on cognitive health product opportunities, influencing R&D direction for emerging vocal and digital biomarker programs to operate across multi-generation product platforms. Recommendations contributed to the formation of a new health tech unit — Brainworks, GN's first preventive and awareness platform connecting hearing and

brain health

- Led a program on the assessment of cognitive load and stress related to hearing in noise, including the assessment of heart rate variability as a marker for cognitive load using wearables
- Directed multidisciplinary and global research teams (US, DK, NL) across diverse hearing health portfolios
- Communicated science routinely to a diverse audience; In addition to peer-reviewed internal publications and presentations, served as Editor for the internal web-based communication platform for GN's Research team, serving to communicate program and project scope, status, and findings to a variety of internal stakeholders, including non-technical

Assistant Chair for Research and Innovation, Clinical Assistant Professor | **Northwestern University - Department of Communication Sciences and Disorders** • January 2024 - current • Evanston, IL

- Directed clinical education and research training initiatives within a nationally recognized audiology program
- Secured federal funding supporting translational research and community-based hearing health programs - applied for \$2+ million in federal and foundation research funding as PI or Co-Investigator, building industry-academic research partnerships - established partnerships with 13 federally funded clinical research and engineering labs across Northwestern University and Northwestern Medicine as part of the proposed R25 for a 5-year partnership plan to build a talent development pipeline
- Developed a funding proposal and co-built a multi-institutional research consortium; Primary Investigator, NIA R43/R44, SBIR Fast-Track, establishing partnerships across 3 universities and 1 industrial partner to secure federal funding to advance auditory health technologies and technology translation
- Led multi-site training network involving **50+ students and 30+ clinical partner organizations**
- Oversaw **doctoral capstone research portfolio** spanning clinical innovation, hearing technology, and community health for 50+ students

Selected Peer-Reviewed Publications*

- **Krull, V.** & Humes, L. E. (2016). Text as a supplement to speech in young and older adults. *Ear and Hearing*, 37(2), e14-e23.
- **Krull, V.**, Humes, L. E., & Kidd, G. R. (2013). Reconstructing wholes from parts. *Ear and Hearing*, 34(2), e14-e23.
- Humes, L.E. and **Krull, V.** (2012). Evidence about Effectiveness of Hearing Aids for Adults. In (Wong, L., Hickson, L. eds.) *Evidence-Based Practice in Audiology: Evaluating Interventions for Children and Adults with Hearing Impairment* (pp 61-92). Plural Publishing, San Diego.
- **Krull, V.**, Luo, X., and Kirk, K.I. (2012). Talker-identification training using simulations of binaurally combined electric and acoustic hearing: Generalization to speech and emotion recognition. *Journal of the Acoustical Society of America*, 131(4), 3069-3078.
- **Krull, V.**, Choi, S., Kirk, K.I., Prusick, L., and French, B. (2010). Lexical effects on spoken word recognition in children with normal hearing. *Ear and Hearing*, 31, 1, 102-114.

* Full publication list available upon request; public data available via Google Scholar.

Selected Talks and Translational Presentations

- **Krull, V.** and Dittberner, A.B. (2018, October). Connected Audiology and the Changing Hearing Healthcare Landscape. Scientist panel presentation at the Canadian Academy of Audiology.
- **Krull, V.** (2018, February). Exploring User Comfort: Toward a Universal Comfort Rating Scale. Invited talk at RUSH Ear Day, RUSH University, Chicago, Illinois.

Education

- PhD, Hearing Science (minor: Neuroscience) | Purdue University
- Master of Science, Audiology | Purdue University
- Bachelor of Pharmacy, First class with distinction | Birla Institute of Technology, Mesra, India